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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/582,970	06/15/2006	Kazutoshi Shimo	0757-0315PUS1.	9108

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EXAMINER

BEHNCKE, CHRISTINE M

ART UNIT	PAPER NUMBER
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3661

NOTIFICATION DATE	DELIVERY MODE
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10/29/2009

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

Office Action Summary	Application No. 10/582,970	Applicant(s) SHIMO ET AL.	
	Examiner CHRISTINE M. BEHNCKE	Art Unit 3661	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 June 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input checked="" type="checkbox"/> Other: <u>See Continuation Sheet</u> |

Continuation of Attachment(s) 6). Other: english translation of JP08-119197A.

DETAILED ACTION

This office action is in response to the preliminary amendment filed 6/15/2006, in which claims 1-7 were presented for examination.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1 and 2 are rejected under 35 U.S.C. 102(b) as being anticipated by Morimoto, JP 08-119197A (paragraphs cited below refer to the machine generated English translation).

(Claim 1) Morimoto describes an automatic steering control apparatus which is carried in a ship having a positioning device for measuring a position of the ship (gyrocompass 20), and outputs a command rudder angle based on a deviation of a heading of the ship from a reference course ([0009]), comprising: an input device for inputting a desired turning center position ([0018]); storing the turning center position input by the input device, inherently requires a memory ([0018]); and a rudder angle output device for outputting a command rudder angle so that a track of the ship draws an arc around a turning center stored in the memory with a turning radius ([0012]), the turning radius being a distance from the position of the ship measured by the ship's positioning device to the turning center ([0010]).

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(Claim 2) Morimoto describes an autopilot which is carried in a ship having a positioning device for measuring a position of the ship (gyrocompass 20), and outputs a command rudder angle based on a deviation of a heading of the ship from a reference course ([0019]-[0020]), comprising: an input device for inputting a desired turning center position ([0018]); storing the turning center position input by the input device, inherently requires a memory ([0018]); and a rudder angle adjuster for adjusting a rudder angle so that a track of the ship draws an arc around a turning center position stored in a memory with a turning radius ([0012]), the turning radius being a distance from the position of the ship measured by the ship's positioning device to the turning center ([0010]).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 3-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Morimoto in view of Hedstrom, US, 4,069,784

(Claim 3) Morimoto describes an automatic steering control apparatus which is carried in a ship having a positioning device for measuring a position of the ship (gyroscope 20), and outputs a rudder angle based on a deviation of a heading of the ship from a reference course ([0009]), comprising: an input device for inputting a desired turning radius and a desired turning center position ([0010], [0018]); a memory for storing the turning radius and the turning center position input by the input device ([0018], presetting radius and position inherently requires a memory); a rudder angle output for outputting a command rudder angle so that a distance from a position of the ship measured by the ship's positioning device to a turning center stored in the memory, approaches the turning radius stored in the memory ([0019]-[0020], [0012]); wherein the rudder angle output device outputs a command rudder angle ([0012]). Morimoto does not describe specifically drawing an arc from the time the ship distance to center equals

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the radius. However, Hedstrom teaches a vessel control apparatus including an input device for inputting a center location and/or radius (Column 19, lines 19-40 and line 57-column 20, line 6 and column 9, line 61-column 10, line 10), a memory for storing the data values (column 9, line 61-column 10, line 10), and a rudder angle output for outputting a rudder angle (column 8, lines 45-51) and so as to adjust a rudder angle so that a track of the ship draws an arc around the turning center with the turning radius from the time when the distance from the position of the ship to the turning center becomes substantially equal to the turning radius (figure 2, column 6, lines 8-41). It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the apparatus of Morimoto with the teachings of Hedstrom because as Hedstrom suggests, including a straight lead distance and determining the rudder angle, turning radius at earliest points of time that equals the radius creates a smooth transition into a yaw movement (column 5, line 60-column 6, line 7).

(Claim 4) Morimoto describes an autopilot which is carried in a ship having a positioning device for measuring a position of a ship (gyroscope 20), and outputs a command rudder angle based on a deviation of a heading of the ship from a reference course ([0009]), comprising: an input device for inputting a desired turning radius and a desired turning center position ([0010], [0018]); a memory for storing the turning radius and the turning center position input by the input device ([0018], presetting radius and position inherently requires a memory); and a rudder angle adjuster to the ship draws a circle, distance from the center equal to the radius selected ([0010]). Morimoto does not describe specifically drawing an arc from the time the ship distance to center equals the

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radius. However, Hedstrom teaches a vessel control apparatus including an input device for inputting a center location and/or radius (Column 19, lines 19-40 and line 57-column 20, line 6 and column 9, line 61-column 10, line 10), a memory for storing the data values (column 9, line 61-column 10, line 10), and a rudder angle adjuster for adjusting a rudder angle so that a distance from the position of the ship measured by a ship's positioning device to a turning center stored in a memory, approaches the turning radius stored in the memory (column 9, lines 25-30), wherein the rudder angle adjuster adjusts a rudder angle so that a track of the ship draws an arc around the turning center with the turning radius from the time when the distance from the position of the ship to the turning center becomes substantially equal to the turning radius (figure 2, column 6, lines 8-41). It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the apparatus of Morimoto with the teachings of Hedstrom because as Hedstrom suggests, including a straight lead distance and determining the rudder angle, turning radius at earliest points of time that equals the radius creates a smooth transition into a yaw movement (column 5, line 60-column 6, line 7).

(Claim 5) Hedstrom further teaches wherein the input device can input a desired turning direction, the memory stores the turning direction input by the input device, and the rudder angle adjuster adjusts a rudder angle so that the ship turns in the turning direction stored in the memory (column 20, line 62-column 21, line 24).

(Claim 6) Morimoto further describes the apparatus comprises an interrupt controller for independently changing the turning direction, the turning radius and the turning center position stored in the memory ([0011]).

(Claim 7) Morimoto describes an autopilot which is carried in a ship having a positioning device for measuring a position of a ship (gyroscope 20), and outputs a command rudder angle based on a deviation of a heading of the ship from a reference course ([0009]), comprising: an input device for inputting a desired turning radius and a desired turning center position ([0010], [0018]); a memory for storing the turning radius and the turning center position input by the input device ([0018], presetting radius and position inherently requires a memory); and a rudder angle adjuster to the ship draws a circle, distance from the center equal to the radius selected ([0010]). Morimoto does not specifically describe inputting a direction, storing the direction, and an adjuster for obtaining a straight line connecting the position of the ship and a turning center. However, Hedstrom teaches a vessel control apparatus including an input device for inputting a center location and/or radius and direction (Column 19, lines 19-40 and line 57-column 20, line 6 and column 9, line 61-column 10, line 10, column 20, line 62-column 21, line 24), a memory for storing the data values (column 9, line 61-column 10, line 10), and a rudder angle adjuster for obtaining a straight line connecting the position of the ship measured by the ship's positioning device and a turning center stored in the memory for storing the turning center position (figure 2, column 21, lines 13-24), obtaining an intersection of the straight line and a turning circle drawn around the turning center stored in the memory with the turning radius stored in the memory (column 10, lines 11-28), obtaining a tangent to the turning circle at the intersection (point 18' column 10, lines 1-10), calculating a distance difference between the position of the ship and the intersection (column 10, lines 45-57), and adjusting a rudder angle

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so that a course direction of the ship approaches the turning direction of the tangent stored in the memory (column 10, lines 45-57, column 6, lines 8-17). It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the apparatus of Morimoto with the teachings of Hedstrom because as Hedstrom suggests, including a straight lead distance and determining the rudder angle, turning radius at earliest points of time that equals the radius creates a smooth transition into a yaw movement (column 5, line 60-column 6, line 7).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to CHRISTINE M. BEHNCKE whose telephone number is (571)272-8103. The examiner can normally be reached on 8:30 am- 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas G. Black can be reached on (571) 272-6956. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

CMB

/Thomas G. Black/
Supervisory Patent Examiner, Art Unit 3661